ABSTRACT OF THE DISCLOSURE

The present invention pertains to a more efficient system and method for forming rectifying junction contacts in PIN alloy-semiconductor devices using photoelectrical and chemical etching. The present invention provides a means of creating rectifying junction contacts on alloy-semiconductor devices such as CdTe and CdZnTe, among others. In addition, the present invention also provides a simple and low cost method for revealing wafer surface morphology of alloy-semiconductors, thus providing an efficient and effective means for selecting single grain semiconductor substrates. Further, the present invention provides radiation detectors employing such alloy-semiconductor devices having improved rectifying junctions as the detector element.